THE EFFECT OF TEAMS GAME TOURNAMENT TO BEHAVIOUR PREVENTION OF ACUTE RESPIRATORY INFECTIONS AMONG SCHOOL AGE CHILDREN

Navira Chairunisa, Ninuk Dian Kurniawati, Eka Mishbahatul Mar'ah Has
Faculty of Nursing, Universitas Airlangga Kampus C Jl Mulyorejo Surabaya East Java, Indonesia
E-mail: ninuk.dk@fkp.unair.ac.id

ABSTRACT

Introduction: Acute respiratory infections was one of infectious disease that remains a major problem in health, especially in indonesia. ARIs can attack various ages, especially children. These happens because health education method to teach children about that has not been developed. TGT is one as an effort to solve this problem. The aim of this study was to analyze the effect of TGT to change behaviour in preventing acute respiratory infections among school age. **Method:** This study was a pra-experiment using pretest-posttest one group design. Sample was school age children at fifth class of SDN Mojo 3 Surabaya. 43 respondents were involved according to cluster random sampling. TGT method was independent variable while knowledge, attitude, and action were dependent variables. Data were collected by using questionnare and observation sheet. Data then analyzed by using Wilcoxon Signed Rank Test with level of significance $p<0.05$. **Results:** Result had showed that TGT method had effect on knowledge ($p=0.000$) and action ($p=0.000$) but not on attitude ($p=0.127$). **Discussion:** It can be concluded that TGT method about ARIs prevention in school can improve the level of knowledge and action in ARIs prevention, but not the attitude. There might be other factors that influenced the attitude that were not investigated in this study. TGT is recomended to implement health promotion for school age about ARIs prevention. It can mix with other method to improve attitude of ARIs prevention behaviour.

Key words: *teams game tournament (tgt), acute respiratory infections (aris), school age, knowledge, attitude, and action*

INTRODUCTION

Infectious disease still becomes major health problems in Indonesia. Based on Ministry of Health's report on 2014, ARIs were one of infectious disease which contributed to an increase in visits public health centre (40-60%) and hospital (15-3-%). ARIs can infect various ages, school age children are still at risk for the disease because a lack of personal hygiene and unable to maintain a healthy diet. Preventive and promotive efforts must be conducted. TGT can be used as one of effective health education methods which suitable with school age children's learning style. But, the effect of TGT on preventive behaviour of acute respiratory infections in school age children still can't be explained.

WHO (2013) also states the incidence of ARI in developing countries with child mortality rates above 40 per 1,000 live births is 15-20 %. Based on Ministry of Health Republic of Indonesia (2013), the incidence of ARIs in Indonesia of infant (26%), toddler-preschooler (49%), and school age children (25%). The prevalence of ARIs in East Java was number three in Indonesia, after West Java and Central Java. Surabaya City Health Department stated that the incidence of ARIs in Surabaya ranked first out of ten diseases from August until December 2014. At Puskesmas (public health center) Mojo on 2012, ARIs were infected 9.960 peoples (BPS Surabaya, 2013).

Based on interview with head of school, it can be seen that SDN Mojo 3 still didn't apply preventive behavior to prevent the transmission of ARIs. Although students at SDN Mojo 3 often infected by mild ARIs, but if it's left alone, it can affect student's concentration in learning and has the potential to become severe ARIs. Research result from Dini (2011) and Martha (2014) also states that health education about ARIs need to be improved both in quality and quantity, so peoples have good behavior in preventing ARIs transmission. There has never been a health education efforts made by health workers to the school-age children in terms of ARIs prevention at Kelurahan Mojo. TGT method is a new learning method that uses the combination of three main

topics in learning, includes lectures, work on a team, and games between teams. TGT method will increase students' interaction actively, make them more motivated to learn, and create a fun learning (Mahony, 2006). This method has been used in previous research to facilitate teaching learning at school, but never been used to educate children about ARIs at school.

Roger (1995) has stated that health education was one of innovation which can affect people's behavior through knowledge, persuasion, decision, implementation, and confirmation. That process will affect student's cognitive, attitude, and psychomotor. Once an innovation is adopted by users, the next expected process is the diffusion itself. Diffusion is the process by which innovations spread to individuals or groups in a particular social system. The aim of this study was to analyze the effect of TGT to change behaviour in preventing acute respiratory infections among school age children.

METHOD

This was a pre experiment research with one group pre-post test design. Population were 5th grade students at SDN Mojo 3 Surabaya (210 students). Sample was students at 5th grade class A and D, taken by using cluster random sampling, 43 students were involved. TGT method was independent variable while knowledge, attitude, and action were dependent variables. Data were collected by using questionnaires (for knowledge and attitude about preventing ARIs transmission) and observation sheet (for children's act about hand washing and cough management). Data collected along one week. Data were then analyzed by using Wilcoxon Signed Rank Test with level of significance $p<0.05$.

RESULTS

Table 1 shows that there were 14 respondents whose knowledge increased after being given treatment. There are 6 respondents whose knowledge does not change and no respondents who experienced a decrease in knowledge. Results of statistical test by Wilcoxon Signed Rank Test shows the results $p = 0.000$ means that there is the influence of health education methods tournament game teams to change the students' knowledge in the prevention of ARIs in school age children.

Table 2 describes that after a given health education almost entirely positive attitude is 31 students. There were no respondents who experienced decrease in attitude amounted to 18 students. Respondents who have increased the attitude amounted to 25 students. Results of statistical test by Wilcoxon Signed Rank Test shows the results $p = 0.127$ means that the method TGTdid not affect the change in attitudes of students in the prevention of ARIs in children of school age, but still plays a role in the increase in the attitude of a minority of respondents.

It shows table 3 that overall, respondents' behavior changed after health education method tournament game teams. Results of statistical test by Wilcoxon Signed Rank Test shows the results $p = 0.000$ means that there is the influence of health education with the methods TGTagainst changes in student action in the prevention of ARIs in school age children.

Table 1. The distribution of students' knowledge about the prevention of ARIs before and after health education with the methods TGT in SDN Mojo 3 Surabaya, on 4-6 May 2015.

No	Knowledge	Pre test		Post test	
		f	%	f	%
1	Poor	6	13,9	0	0
2	Average	12	27,9	10	23,3
3	Good	25	58,1	33	76,7
	Total	43	100	43	100
Mean		2,44		1,23	
Standard Deviation		0,734		0,427	
Uji Wilcoxon Signed Rank Test		p = 0,000			

Table 2 Distribution of student attitudes about the prevention of ARIs before and after health education with the methods TGT in SDN Mojo 3 Surabaya, on 4-6 May 2015.

No	Attitude	Pre test		Post test	
		f	%	f	%
1	Positive	24	55,8	31	72,1
2	Negative	19	44,2	12	27,9
	Total	43	100	43	100
Mean		25,72		31,40	
Standard Deviation		3,362		3,513	
Uji Wilcoxon Signed Rank Test		p = 0,127			

Table 3 Distribution of student action on the prevention of ARIs before and after health education with the methods TGT in SDN Mojo 3 Surabaya, May 4-6, 2015.

No	Behavior	Pre test		Post test	
		f	%	f	%
1	Poor	38	88,4	0	0
2	Average	4	9,3	0	0
3	Good	1	2,3	43	100
	Total	43	100	43	100
Mean		2,86		1,00	
Standard Deviation		0,413		0,000	
Uji Wilcoxon Signed Rank Test		p = 0,000			

DISCUSSION

Research shows that health education of teams game tournament improved knowledge and skills of the children, but it did not affect the children attitude toward ARIs prevention. The TGT increased the knowledge of the majority of respondents, although there were some respondents who did not experience an improvement in the category of knowledge. Some respondents remained in the category of average. Roger (1995) illustrates that the acceptance of a person towards an innovation is a process of mental or behavioral changes either in the form of knowledge (cognitive), attitudes (affective), and skills (pshycomotor) in a person. These processess take place since someone knows the innovation until he/she decides to adopt the innovation. Innovation in this research is the method of health education namely teams tournament games that are expected to affect the knowledge (cognitive) of the respondents.

During the research process, basic understandings of ARI were given in a form of lecture at the stage where a facilitator presented the material and outline the problem. Armed with the initial information they already have, in a small group session, each group discussed what solution to problems they can provide for the prevention of ARI in the school environment. Afterward, there was a game on each end to strengthen the students' knowledge about the prevention of ARIs, and make respondents more eager to follow the process of health education.

According to Bloom, as quoted by Notoatmodjo (2003) several factors may affect the level of knowledge, including internal factors (education, interests and physical condition), external factors (ancestry, society, and the means), and a factor approach to learning (strategies and methods). Increased knowledge after TGT may be influenced by many things. Based on the characteristics of respndens, researchers concluded that the respondents had a character that is considered able to receive and process information well in the hope that increased knowledge of changes in the behavior of ARI prevention in schools.

Other factors that presumably affect learning were students' interests and learning strategies. Students were interested in receiving health education with new methods and strategies because TGT makes them more enthusiastic and easy to understand health information provided, thereby increasing the level of their previous knowledge. We conclude that health education with the TGT methods improved students' knowledge about ARI because TGT was able to deliver the right information in enhancing students' knowledge.

TGT shows not so significant results in altering the children attitude toward ARIs prevention. Although there were enhancements in posttest attitude of some respondents who previously negative attitude turned positive, there were 12 respondents who remained on the negative category. These results may be stemmed from the processes of this study.

In undertaking this study, researchers gave the introductory material intended to evoke strong emotions that are still in line with the given health education materials. This material contains persuasive messages that enabled students to receive instruction and primary materials easily. The cognitive component was discussed at large proportion on provision of material regarding ARIs and how to prevent that. It was also discussed in discussion sessions and and during games. Affective component was touched mainly on introductory material and also implicit in the main material. Conative component itself is the tendency of people to do something that affected affection and cognition. Conative component was pretty much honed during group discussions and games where in the process the respondents were asked to provide a solution of problems related to ARIs prevetion in accordance with their circumstances.

The study was conducted 3 days, pretest and intervention on the first day, the second day of the intervention, and posttest on the third day. The very short time between TGT and posttest may affect the results in terms of children attitude. Three days interval between pre test, intervention, and post test may cause the majority of respondents did not experience an increase in attitude. However, respondents score marginally increased at the option of ARIs transmission prevention. This score, although marginal, is paramount because ARIs is highly contagious. Intervention by TGT method should be carried out repeatedly until attitude perfectly formed (Suyanti, 2013).

Notoadmodjo (2003) asserts that attitude is a reaction or response of someone who is still closed to a stimulus or object. Factors that influence a person's attitude, among others (Anwar, 2009): knowledge, personal experience, the influence of others that are considered important, culture, mass media and electronic, emotional, educational institutions or religious institutions, educational level.

Knowledge is an important domain for the formation of attitudes (Widyastuti, 2005), but as we know that knowledge is not the only factor affecting attitudes. There are several possible causes for the respondents' attitudes did not change significantly or decline of their pretest and posttest results, among others: the students as respondents, the researchers as presenters and facilitators, and implementation of TGT method (Suyanti, 2013).

Judging from the application process and the weaknessess of the TGT method, there are several factors influencing the effectiveness of TGT. These factors are: the execution time, the atmosphere during the learning process takes place, and the group heterogeneity. The timing of this TGT is a considerable factor into play because this method requires a long time (60 minutes) for the implementation of activities includes lectures, group discussions, and games. The timing of the intervention is done after school in order not to disrupt the process of teaching and learning in schools so that students may begin to feel tired when the intervention took place and reduced attention in absorbing the information provided.

Suyanti (2013) found that TGT less effective in improving students' attitudes about adolescent reproductive health. She also found the necessary an increase in the intensity to be able to change a person's attitude. In this study, an increase in the attitude of the respondents was not so large that it can be concluded that the method TGT not be an effective method to improve students' attitudes about ARIs and thus further research and development is required.

Our observation on the students' behavior shows that TGT significantly increases students' behavior in ARIs prevention, especially hand washing and cough etiquette. Before the intervention, the majorities of children had poor skills in hand washing and cough etiquette because they had never received prior learning related ARIs prevention. After being given the intervention TGT, all respondents, both men and women, experienced improvement in hand washing and cough etiquette behavior.

Leighbody (1968), as quoted by Haryati (2009) illuminates that skills can be trained through repeated practice to become a habit. In this study, students are taught to wash their hands and cough etiquette through lecture, demonstration in class regarding a proper handwash and cough etiquette, during the discussion groups, and during games when students were required to practice hand washing

and cough etiquette of each group in the class. Hence, from a series of these activities the students were able to practice hand washing and cough etiquette in everyday life. The researchers concluded that the method TGTis effective for improving student action to hand washing and cough etiquette correctly.

CONCLUSION

Health education methods by using teams game tournament affect knowledge of school-age children in the prevention of ARI because it is a new, interesting, and enjoyable health education in nature so that children can absorb information well. TGT method has no effect on the attitude of school-age children in the prevention of ARI. This is due to various factors such as the respondent students, researchers, and process execution method of TGT. TGT influences the behaviors of school age children in the prevention of ARI in SDN Mojo 3 Surabaya because of the skill were taught repeatedly during TGT so that students could understand and practice how to wash their hands and performed cough etiquette correctly.

Further research needs to be done, how many times TGT can affect a person's attitude or methods TGT combined with other methods of health education in order to influence the attitude of a person in ARI preventions.

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